# INSERTS FOR PLASTIC

ATS
bet on us

Quality Sistem Certified Company UNI EN ISO 9001:2015 Reg.3023-A

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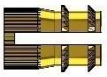
# INSERT SELECTION GUIDE

| | Hard thermoplastics PA – PPS- PBT – PC/ABS | Medium thermoplastics ABS – PA – POM – PVC | Soft thermoplastics PP – PE –HDPE | Amorphous thermoplastics PPO – PC | Thermosetting | Thermosetting polyesters SMC – DMC – BMC | Thermo-plastic foams | Transparent foams | Traction |
|---|---|---|---|---|---|---|---|---|---|
|  ATSUSL | OK | OK | OK | OK hot No ultrasound | NO | NO | +/- | NO | OK |
|  ATSHSL | OK | OK | OK | OK hot No ultrasound | NO | NO | +/- | NO | OK |
|  ATSUTC | OK | OK | OK | OK hot No ultrasound | NO | NO | +/- | NO | OK |
|  ATSUHL | +/- | +/- | NO | OK | NO | NO | +/- | NO | OK |
|  ATSHHL | +/- | +/- | NO | OK | NO | NO | +/- | NO | OK |
|  ATSUFL | NO | OK | OK | NO | NO | NO | NO | NO | +/- |
|  ATSHFL | NO | OK | OK | NO | NO | NO | NO | NO | +/- |
|  ATSUPLK | NO | OK | OK | NO | NO | NO | NO | NO | +/- |
|  ATSUBL | NO | NO | NO | NO | OK | NO | NO | NO | +/- |
|  ATSHBL | NO | NO | NO | NO | OK | NO | NO | NO | +/- |
|  ATSHBLR | NO | NO | NO | NO | OK | NO | NO | NO | +/- |
|  ATSUSP | NO | NO | NO | NO | OK | +/- | NO | NO | +/- |

| | Hard thermoplastics PA – PPS-PBT – PC/ABS | Medium thermoplastics ABS – PA – POM – PVC | Soft thermoplastics PP – PE – HDPE | Amorphous thermoplastics PPO – PC | Thermosetting | Thermosetting polyesters SMC – DMC – BMC | Thermo-plastic foams | Transparent foams | Traction |
|---|---|---|---|---|---|---|---|---|---|
|  ATSHSP | NO | NO | NO | NO | OK | +/- | NO | NO | +/- |
|  ATSUPTS | NO | NO | NO | NO | OK | +/- | NO | NO | +/- |
|  ATSHPTS | NO | NO | NO | NO | OK | +/- | NO | NO | +/- |
|  ATSUFTC | OK | OK | OK | OK | OK | OK | OK | OK | OK |
|  ATSCPBCM | +/- | OK | OK | OK | +/- | NO | NO | NO | +/- |
|  ATSCPBCML | +/- | OK | OK | OK | +/- | NO | NO | NO | +/- |
|  ATSU212 | +/- | OK | OK | NO | +/- | +/- | OK | OK | OK |
|  ATSBAF212 | +/- | OK | OK | NO | +/- | +/- | OK | OK | OK |
|  ATSBAF318 | +/- | OK | OK | NO | +/- | +/- | OK | OK | OK |
|  ATSBAM | OK | +/- | NO | NO | OK | OK | OK | OK | OK |

# ATSUSL - ATSHSL

## HOT INSERTION

**ATSUSL** and **ATSHSL** are threaded brass inserts for use on thermoplastic materials by means of heat or ultrasonic insertion.
Opposite knurling provides excellent tensile and torsion resistance.
They can also be inserted in co-moulding.

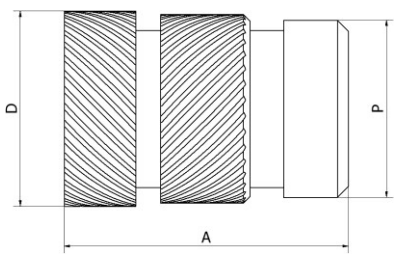
ATSUSL

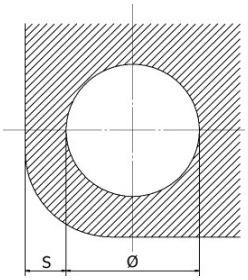
ATSHSL

| CODE | INTERNAL THREAD | A | B | C | D | P | HOLE Ø - 0,00 + 0,10 | WALL MINIMUM THICKNESS S |
|---|---|---|---|---|---|---|---|---|
| **ATSUSLM2**<br>**ATSHSLM2** | M 2 | 4 | 0,53 | 4,8 | 3,6 | 3,1 | 3,2 | 1,3 |
| **ATSUSLM2,5**<br>**ATSHSLM2,5** | M 2,5 | 5,7 | 0,61 | 5,5 | 4,6 | 3.9 | 4 | 1,6 |
| **ATSUSLM3**<br>**ATSHSLM3** | M 3 | 5,7 | 0,61 | 5,5 | 4,6 | 3,9 | 4 | 1,6 |
| **ATSUSLM4**<br>**ATSHSLM4** | M 4 | 8,1 | 0,91 | 7,1 | 6,3 | 5,5 | 5,6 | 2,1 |
| **ATSUSLM5**<br>**ATSHSLM5** | M 5 | 9,5 | 1,09 | 7,9 | 7,1 | 6,3 | 6,4 | 2,6 |
| **ATSUSLM6**<br>**ATSHSLM6** | M 6 | 12,7 | 1,35 | 9,5 | 8,7 | 7,9 | 8 | 3,3 |
| **ATSUSLM8**<br>**ATSHSLM8** | M 8 | 12,7 | 1,35 | 11,1 | 10,2 | 9,5 | 9,6 | 4,5 |
| **ATSUSLM10**<br>**ATSHSLM10** | M 10 | 12,7 | 1,6 | 14 | 12,6 | 11,8 | 11,9 | 6 |
| **ATSUSLM12**<br>**ATSHSLM12** | M 12 | 15,9 | 2 | 19 | 16,7 | 15,8 | 16 | 8 |

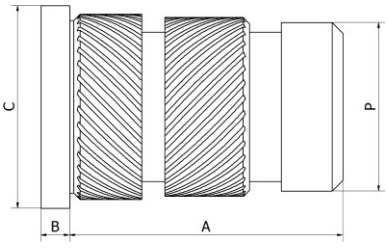
*All dimensions are expressed in mm*

ATSUSL




ATSHSL



# ATSUTC
## HOT INSERTION

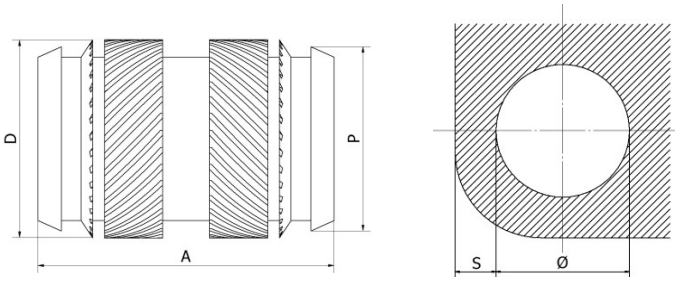
**ATSUTC** is a threaded brass insert with superior sealing characteristics than the ATSUSL insert due to its opposing knurls and knurled flanges.
The insert's symmetrical shape is also recommended for automatic insertion.

ATSUTC

| CODE | INTERNAL THREAD | A | B | C | D | P | HOLE Ø - 0,00 + 0,10 | WALL MINIMUM THICKNESS S |
|---|---|---|---|---|---|---|---|---|
| **ATSUTCM2** | M 2 | 4 | / | / | 3,5 | 3,1 | 3,2 | 1,3 |
| **ATSUTCM2,5** | M 2,5 | 5,7 | / | / | 4,4 | 3.9 | 4 | 1,6 |
| **ATSUTCM3** | M 3 | 5,7 | / | / | 4,4 | 3,9 | 4 | 1,6 |
| **ATSUTCM4** | M 4 | 8,1 | / | / | 6,1 | 5,5 | 5,6 | 2,1 |
| **ATSUTCM5** | M 5 | 9,5 | / | / | 6,8 | 6,3 | 6,4 | 2,6 |
| **ATSUTCM6** | M 6 | 12,7 | / | / | 8,5 | 7,9 | 8 | 3,3 |
| **ATSUTCM8** | M 8 | 12,7 | / | / | 10,0 | 9,5 | 9,6 | 4,5 |
| **ATSUTCM10** | M 10 | 12,7 | / | / | 12,3 | 11,8 | 11,9 | 6 |
| **ATSUTCM12** | M 12 | 15,9 | / | / | 16,3 | 15,8 | 16 | 8 |

*All dimensions are expressed in mm*

ATSUTC



# ATSUHL - ATSHHL

## HOT INSERTION

**ATSUHL** and **ATSHHL** are threaded brass inserts for installation in amorphous, notch-sensitive thermoplastics.
Characterised by rounded knurls, they can also be inserted in co-moulding.

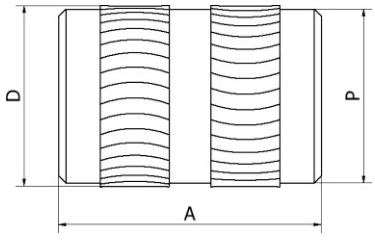
## ATSUHL

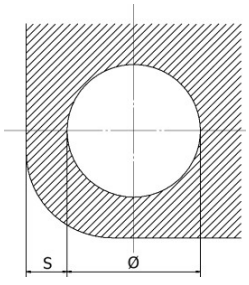
## ATSHHL

| CODE | INTERNAL THREAD | A | B | C | D | P | HOLE Ø - 0,00 + 0,10 | WALL MINIMUM THICKNESS S |
|---|---|---|---|---|---|---|---|---|
| **ATSUHLM2** **ATSHHLM2** | M 2 | 3,9 | 0,51 | 4,8 | 3,5 | 3,1 | 3,2 | 1,4 |
| **ATSUHLM2,5** **ATSHHLM2,5** | M 2,5 | 5,8 | 0,58 | 5,5 | 4,4 | 3,9 | 4,0 | 1,8 |
| **ATSUHLM3** **ATSHHLM3** | M 3 | 5,8 | 0,58 | 5,5 | 4,4 | 3,9 | 4,0 | 1,8 |
| **ATSUHLM4** **ATSHHLM4** | M 4 | 8,1 | 0,89 | 7,1 | 6,1 | 5,5 | 5,6 | 2,4 |
| **ATSUHLM5** **ATSHHLM5** | M 5 | 9,5 | 1,07 | 7,9 | 6,9 | 6,3 | 6,4 | 2,8 |
| **ATSUHLM6** **ATSHHLM6** | M 6 | 12,7 | 1,32 | 9,5 | 8,5 | 7,9 | 8,0 | 3,6 |
| **ATSUHLM8** **ATSHHLM8** | M 8 | 12,7 | 1,32 | 11,1 | 10,0 | 9,5 | 9,6 | 5 |

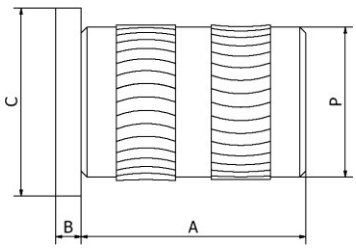
*All dimensions are expressed in mm*

## ATSUHL




## ATSHHL



# ATSUFL - ATSHFL

## INSERTION BY PRESSURE

**ATSUFL** and **ATSHFL** are threaded brass press-fit inserts suitable for most soft and medium thermoplastic materials.

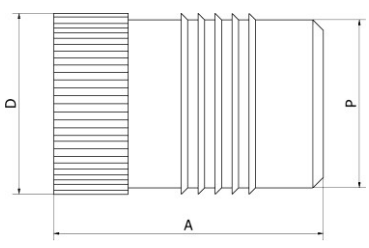
## ATSUFL

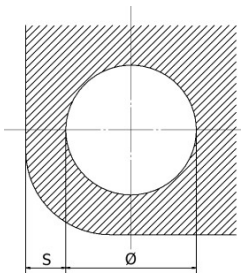
## ATSHFL

| CODE | THREAD | A | B | C | D | P | HOLE Ø - 0,00 + 0,10 | WALL MINIMUM THICKNESS S |
|---|---|---|---|---|---|---|---|---|
| **ATSUFLM2**<br>**ATSHFLM2** | M 2 | 3,9 | 0,51 | 4,8 | 3,5 | 3,1 | 3,2 | 1,4 |
| **ATSUFLM2,5**<br>**ATSHFLM2,5** | M 2,5 | 5,8 | 0,58 | 5,5 | 4,4 | 3,9 | 4 | 1,8 |
| **ATSUFLM3**<br>**ATSHFLM3** | M 3 | 5,8 | 0,58 | 5,5 | 4,4 | 3,9 | 4 | 1,8 |
| **ATSUFLM4**<br>**ATSHFLM4** | M 4 | 8,1 | 0,89 | 7,1 | 6,1 | 5,5 | 5,6 | 2,4 |
| **ATSUFLM5**<br>**ATSHFLM5** | M 5 | 9,5 | 1,07 | 7,9 | 6,9 | 6,3 | 6,4 | 2,8 |
| **ATSUFLM6**<br>**ATSHFLM6** | M 6 | 12,7 | 1,32 | 9,5 | 8,5 | 7,9 | 8 | 3,6 |
| **ATSUFLM8**<br>**ATSHFLM8** | M 8 | 12,7 | 1,32 | 11,1 | 10 | 9,5 | 9,6 | 5 |

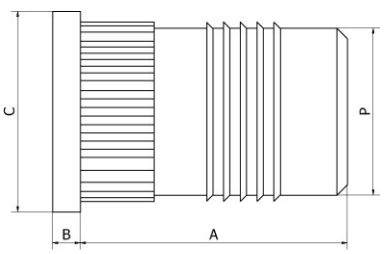
*All dimensions are expressed in mm*

### ATSUFL




### ATSHFL



# ATSUPLK

## INSERTION BY PRESSURE

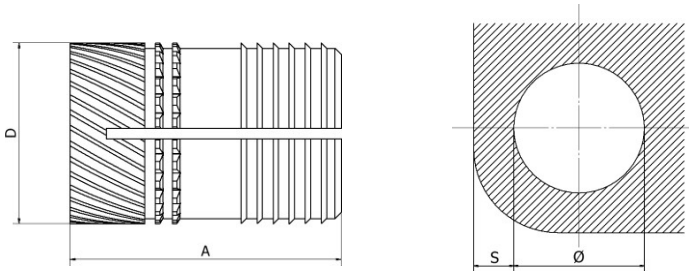
**ATSUPLK** is a threaded brass insert for quick installation in soft and medium thermoplastic materials.
Equipped with fins and knurling, unlike the ATSUFL insert, it features a vertical notch which, after insertion, has a slight self-braking effect on the screw.

ATSUPLK

| CODE | INTERNAL THREAD | A | B | C | D | P | HOLE Ø - 0,00 + 0,10 | WALL MINIMUM THICKNESS S |
|---|---|---|---|---|---|---|---|---|
| **ATSUPLKM2** | M 2 | 4 | / | / | 3,5 | / | 3,2 | 1,6 |
| **ATSUPLKM2,5** | M 2,5 | 5,8 | / | / | 4,4 | / | 4,0 | 2 |
| **ATSUPLKM3** | M 3 | 5,8 | / | / | 4,4 | / | 4,0 | 2 |
| **ATSUPLKM4** | M 4 | 8,2 | / | / | 6,1 | / | 5,6 | 2,8 |
| **ATSUPLKM5** | M 5 | 9,5 | / | / | 6,8 | / | 6,4 | 3,2 |
| **ATSUPLKM6** | M 6 | 12,7 | / | / | 8,5 | / | 8 | 4 |
| **ATSUPLKM8** | M 8 | 12,7 | / | / | 10 | / | 9,6 | 4,8 |

*All dimensions are expressed in mm*

ATSUPLK



# ATSUBL – ATSHBL - ATSHBLR

## INSERTION BY PRESSURE

**ATSXBL**, **ATSXHBL** and **ATSXHBLR** are press-fit brass threaded inserts with an expanding seal, ideal for thermosets.
Equipped with knurling, they feature a vertical notch which has a slight self-locking effect on the screw after insertion.

ATSUBL

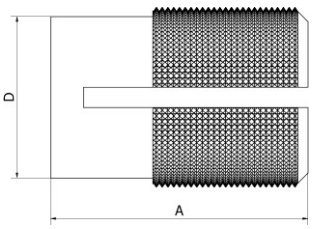
ATSHBL

ATSHBLR

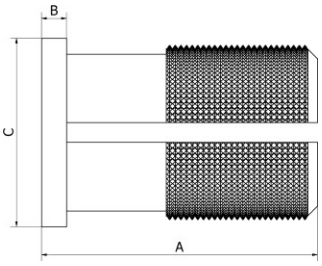
| CODE | INTERNAL THREAD | A | B | C | D | P | HOLE Ø - 0,00 + 0,10 | WALL MINIMUM THICKNESS S |
|---|---|---|---|---|---|---|---|---|
| **ATSUBLM2**<br>**ATSHBLM2**<br>**ATSHBLRM2** | M 2 | 3,9 | 0,43 | 4,8 | 3,2 | / | 3,2 | 2,4 |
| **ATSUBLM2,5**<br>**ATSHBLM2,5**<br>**ATSHBLRM2,5** | M 2,5 | 4,7 | 0,51 | 5,5 | 4 | / | 4 | 3,2 |
| **ATSUBLM3**<br>**ATSHBLM3**<br>**ATSHBLRM3** | M 3 | 4,7 | 0,51 | 5,5 | 4 | / | 4 | 3,2 |
| **ATSUBLM4**<br>**ATSHBLM4**<br>**ATSHBLRM4** | M 4 | 7,9 | 0,82 | 7,1 | 5,5 | / | 5,6 | 4 |
| **ATSUBLM5**<br>**ATSHBLM5**<br>**ATSHBLRM5** | M 5 | 9,4 | 0,99 | 7,9 | 6,3 | / | 6,4 | 4,8 |
| **ATSUBLM6**<br>**ATSHBLM6**<br>**ATSHBLRM6** | M 6 | 12,6 | 1,25 | 9,5 | 7,9 | / | 8 | 6 |
| **ATSUBLM8**<br>**ATSHBLM8**<br>**ATSHBLRM8** | M 8 | 12,6 | 1,25 | 11,1 | 9,5 | / | 9,6 | 7 |

*All dimensions are expressed in mm*

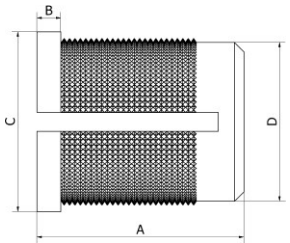
ATSUBL

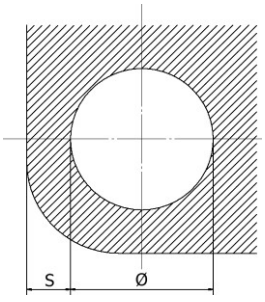



ATSHBL




ATSHBLR



# ATSUSP - ATSHSP

## INSERTION BY PRESSURE

**ATSUSP** and **ATSHSP** are threaded brass inserts designed for use in hard and brittle thermosets.
The sharp-edged knurling allows for high torsion resistance.

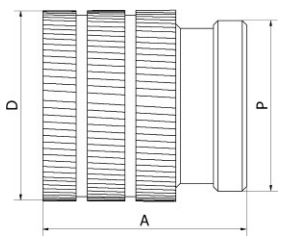
ATSUSP

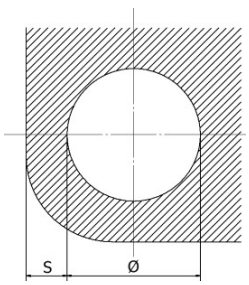
ATSHSP

| CODE | INTERNAL THREAD | A | B | C | D | P | HOLE Ø - 0,00 + 0,10 | WALL MINIMUM THICKNESS S |
|---|---|---|---|---|---|---|---|---|
| **ATSUSPM2**<br>**ATSHSPM2** | M 2 | 4,1 | 0,51 | 4,8 | 3,3 | 3 | 3,1 | 1,6 |
| **ATSUSPM2,5**<br>**ATSHSPM2,5** | M 2,5 | 5,3 | 0,58 | 5,5 | 4,2 | 3,7 | 3,8 | 2 |
| **ATSUSPM3**<br>**ATSHSPM3** | M 3 | 5,3 | 0,58 | 5,5 | 4,2 | 3,7 | 3,8 | 2 |
| **ATSUSPM4**<br>**ATSHSPM4** | M 4 | 7,4 | 0,89 | 7,1 | 5,8 | 5,3 | 5,4 | 2,5 |
| **ATSUSPM5**<br>**ATSHSPM5** | M 5 | 8,3 | 1,07 | 7,9 | 6,6 | 6,1 | 6,2 | 2,5 |
| **ATSUSPM6**<br>**ATSHSPM6** | M 6 | 9,2 | 1,32 | 9,5 | 8,2 | 7,7 | 7,8 | 2,8 |
| **ATSUSPM8**<br>**ATSHSPM8** | M 8 | 9,2 | 1,32 | 11,1 | 9,7 | 9,3 | 9,3 | 3,8 |
| **ATSUSPM10**<br>**ATSHSPM10** | M 10 | 9,2 | 1,32 | 14 | 12,7 | 12,2 | 12,3 | 5 |

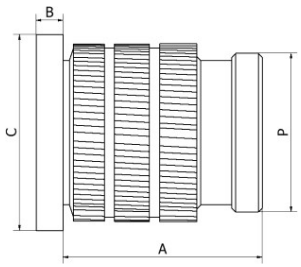
*All dimensions are expressed in mm*

ATSUSP




ATSHSP



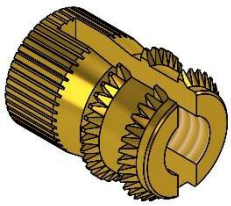
# ATSCPBCM – ATSCPBCML

## INSERTION BY PRESSURE

**ATSCPBCM** and **ATSCPBCML** are brass expansion inserts designed for press-fit installation in all thermoplastic materials. Once installed, they provide a slight self-locking effect on the screw. Excellent resistance to torque and pull-out forces.

ATSCPBCM

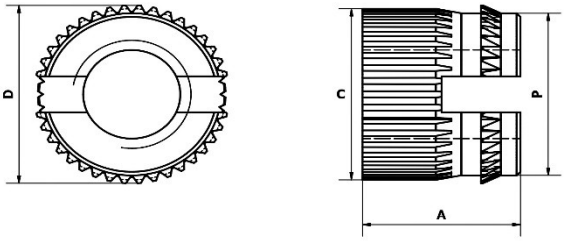
ATSCPBCML



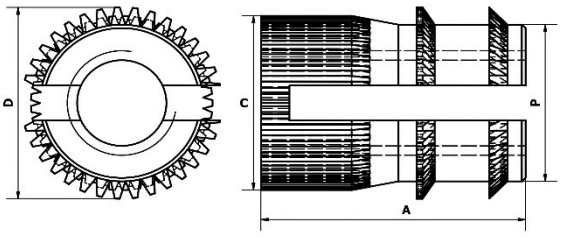
| CODE | INTERNAL THREAD | A | C | D | P | HOLE Ø |
|---|---|---|---|---|---|---|
| **ATSCPBCM2** | M 2 | 3,5 | 3,5 | 3,9 | 3,1 | 3,1-3,2 |
| **ATSCPBCM2,5** | M 2,5 | 4 | 4 | 4,4 | 3,5 | 3,6-3,7 |
| **ATSCPBCM3** | M3 | 5 | 5 | 5,6 | 4,5 | 4,6-4,7 |
| **ATSCPBCML3** | | 8 | 5 | 5,6 | 4,5 | 4,6-4,7 |
| **ATSCPBCMLL3** | | 9,5 | 5 | 5,6 | 4,5 | 4,6-4,7 |
| **ATSCPBCM4** | M4 | 5 | 6 | 6,6 | 5,4 | 5,5-5,6 |
| **ATSCPBCML4** | | 8 | 6 | 6,6 | 5,4 | 5,5-5,6 |
| **ATSCPBCMLL4** | | 9,5 | 6 | 6,6 | 5,4 | 5,5-5,6 |
| **ATSCPBCM5** | M5 | 6 | 7 | 7,6 | 6,5 | 6,6-6,7 |
| **ATSCPBCML5** | | 9 | 7 | 7,6 | 6,5 | 6,6-6,7 |
| **ATSCPBCM6** | M6 | 7 | 8 | 8,6 | 7,5 | 7,6-7,7 |
| **ATSCPBCML6** | | 9 | 8 | 8,6 | 8,72 | 7,6-7,7 |
| **ATSCPBCML8** | M8 | 10 | 10 | 10,6 | 9,4 | 9,5-9,6 |

*All dimensions are expressed in mm*

ATSCPBCM




ATSCPBCML



# ATSUPTS - ATSHPTS

## INSERTION BY PRESSURE

**ATSUPTS** and **ATSHPTS** are male threaded brass inserts designed for use in thermosets.
The sharp-edged knurling allows for high torsion and tensile strength, pin threads available in different lengths.

## ATSUPTS

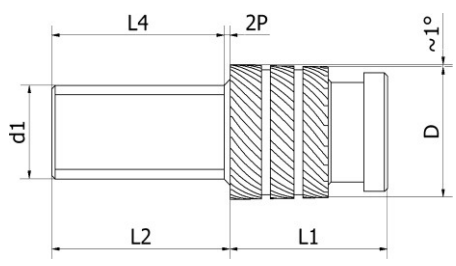
## ATSHPTS

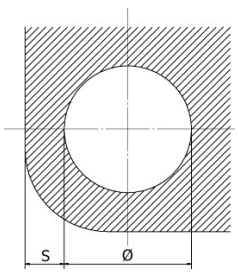
| CODE | d1 | L2 | D | L1 | D4 | L3 | HOLE Ø - 0,00 + 0,10 | WALL MINIMUM THICKNESS |
|---|---|---|---|---|---|---|---|---|
| **ATSUPTSM2**<br>**ATSHPTSM2** | M 2 | 6-10-16-25 | 3,35 | 4 | -<br>4,8 | -<br>0,6 | 3,1 | 1,6 |
| **ATSUPTSM2,5**<br>**ATSHPTSM2,5** | M 2,5 | 6-10-16-25 | 4,2 | 5,3 | -<br>5,6 | -<br>0,6 | 3,8 | 2 |
| **ATSUPTSM3**<br>**ATSHPTSM3** | M 3 | 6-10-16-25 | 4,2 | 5,3 | -<br>5,6 | -<br>0,6 | 3,8 | 2 |
| **ATSUPTSM3,5**<br>**ATSHPTSM3,5** | M 3,5 | 6-10-16-25 | 5 | 6,3 | -<br>6,4 | -<br>0,8 | 4,6 | 2,5 |
| **ATSUPTSM4**<br>**ATSHPTSM4** | M 4 | 6-10-16-25 | 5,8 | 7,4 | -<br>7,2 | -<br>0,8 | 5,4 | 2,5 |
| **ATSUPTSM5**<br>**ATSHPTSM5** | M 5 | 6-10-16-25 | 6,6 | 8,3 | -<br>8 | -<br>1 | 6,2 | 2,5 |
| **ATSUPTSM6**<br>**ATSHPTSM6** | M 6 | 6-10-16-25 | 8,2 | 9,2 | -<br>9.5 | -<br>1,3 | 7,8 | 2,8 |
| **ATSUPTSM8**<br>**ATSHPTSM8** | M 8 | 6-10-16-25 | 9,7 | 9,2 | -<br>11 | -<br>1,3 | 9,3 | 3,8 |

THREAD LENGTH L4 = L2-2P
(P=THREAD PITCH)

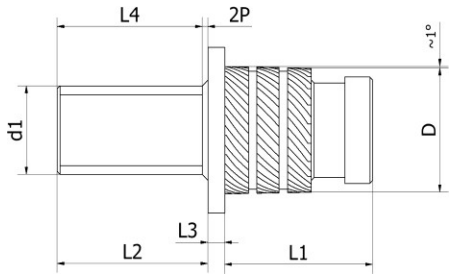
*All dimensions are expressed in mm*

## ATSUPTS



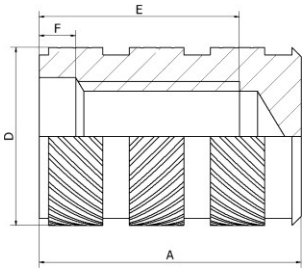

## ATSHPTS



# ATSUFTC
## INSERTION MOULDING

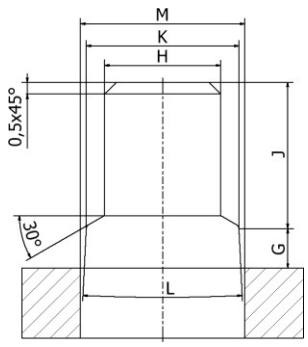
**ATSUFTC** is a threaded brass insert with a blind bottom ideal for co-moulding.
Its 3 opposed helical strip knurling together with its grooves provide high torsion and tension results.

ATSUFTC




| CODE | INTERNAL THREAD | A | D | Min. E | F |
|---|---|---|---|---|---|
| **ATSUFTCM2** | M 2 | 5,5 | 3,4 | 3,6 | 1 |
| **ATSUFTCM2,5** | M 2,5 | 6,4 | 4,3 | 4 | 1,2 |
| **ATSUFTCM3** | M 3 | 7,3 | 4,7 | 4,6 | 1,3 |
| **ATSUFTCM4** | M 4 | 10,2 | 6,3 | 6,7 | 1,8 |
| **ATSUFTCM5** | M 5 | 11,2 | 7,3 | 7,4 | 2 |
| **ATSUFTCM6** | M 6 | 14,4 | 9,8 | 8,1 | 2 |
| **ATSUFTCM8** | M 8 | 16,5 | 11,4 | 11,1 | 2,3 |
| **ATSUFTCM10** | M 10 | 17,9 | 13,8 | 11,9 | 2,4 |

# REFERENCE PIN ON THE MOULD



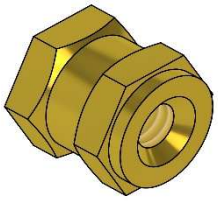

| INTERNAL THREAD | G -020 +040 mm | H -025 +000 mm | J -100 +100 mm | K -0125 +0125 mm | L Including Degrees | M mm |
|---|---|---|---|---|---|---|
| M 2 | 0,8 | 1,55 | 2,65 | 2,3 | 6 | 3 |
| M 2,5 | 0,9 | 2 | 3 | 2,8 | 5 | 3,5 |
| M 3 | 1,05 | 2,45 | 3,4 | 3,125 | 4,5 | 4 |
| M 4 | 1,55 | 3,25 | 5 | 4,425 | 4,5 | 5,4 |
| M 5 | 1,7 | 4,15 | 5,55 | 5,125 | 5 | 6 |
| M 6 | 1,8 | 4,95 | 6,15 | 6,5 | 5,5 | 8 |
| M 8 | 2 | 6,7 | 9 | 8,5 | 6 | 10 |
| M 10 | 2,1 | 8,4 | 9,7 | 10,5 | 6 | 12 |

*All dimensions are expressed in mm*

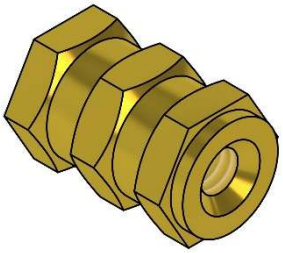
# ATSIECM – ATSIECML

## INSERTION MOULDING

ATSIECM



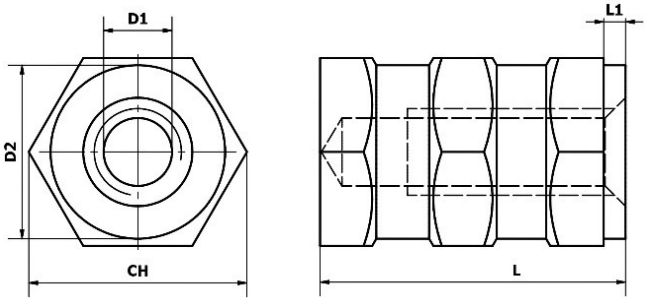
ATSIECML



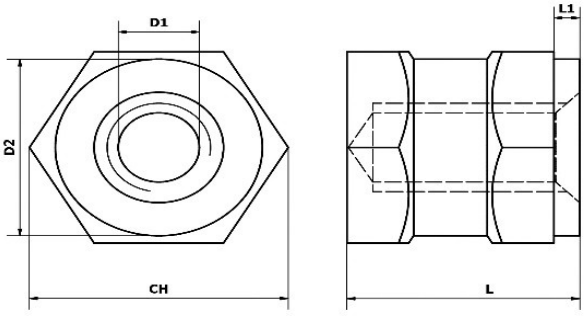
| CODE | D1 | CH | L | L1 | D2 |
|---|---|---|---|---|---|
| **ATSIECM3** | M3 | 5 | 4,5 | 1 | 4 |
| **ATSIECML3** | | 5 | 6 | 1 | 4 |
| **ATSIECM4** | M4 | 6 | 6 | 1 | 5,5 |
| **ATSIECML4** | | 6 | 8 | 1 | 5,5 |
| **ATSIECM5** | M5 | 7 | 7,5 | 1 | 7 |
| **ATSIECML5** | | 7 | 10 | 1 | 7 |
| **ATSIECM6** | M6 | 9 | 9 | 1 | 8 |
| **ATSIECML6** | | 9 | 12 | 1 | 8 |
| **ATSIECM8** | M8 | 11 | 12 | 1 | 10 |
| **ATSIECML8** | | 11 | 16 | 1 | 10 |
| **ATSIECM10** | M10 | 14 | 15 | 1 | 12 |
| **ATSIECML10** | | 14 | 20 | 1 | 12 |

*All dimensions are expressed in mm*

ATSIECML




ATSIECM

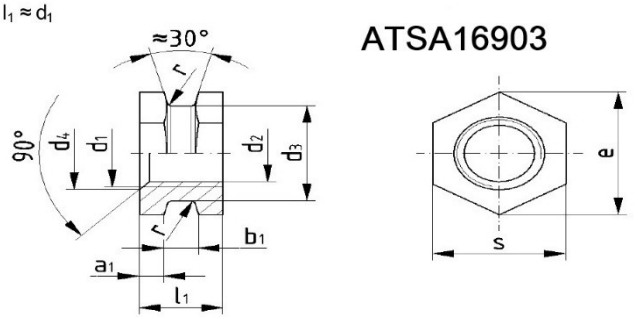


# THREADED INSERT DIN 16903 (DIN ISO 1101)

## INSERTION MOULDING

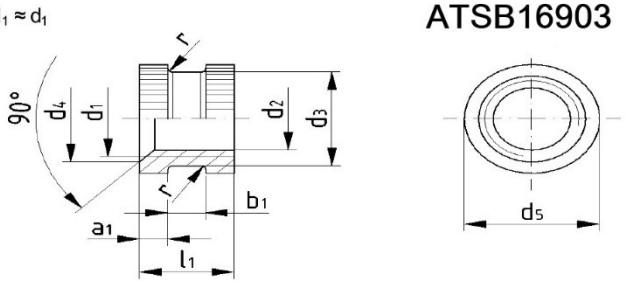
$l_1 \approx d_1$

ATSA16903



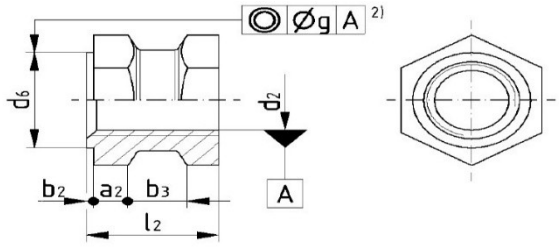

$l_1 \approx d_1$

ATSB16903



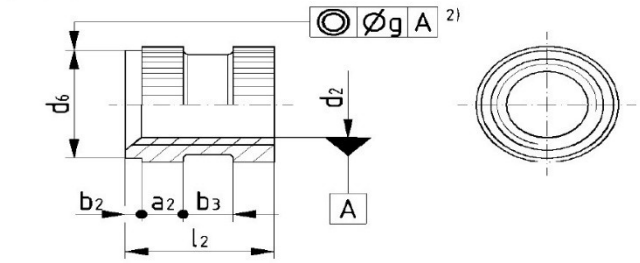

$l_2 \approx 1{,}5d_1$

ATSC16903

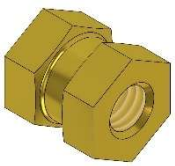


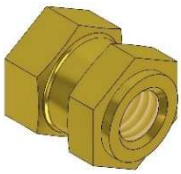

$l_2 \approx 1{,}5d_1$

ATSD16903




| Threaded inserts | | B, D | | A, B, C, D | | | | | A, C | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Quote | Tolerance | M 2 | M 2,5 | M 3 | M 3,5 | M 4 | M 5 | M 6 | M 8 | M 10 | M 12 |
| $a_1$ | | 0,8 | 0,9 | 0,9 | 1 | 1,2 | 1,6 | 1,8 | 2 | 3 | 3,5 |
| $a_2$ | | 0,9 | 1 | 1,2 | 1,6 | 1,8 | 2 | 2,5 | 4 | 4 | 5 |
| $b_1$ | | 0,8 | 0,8 | 1,2 | 1,4 | 1,4 | 1,8 | 2,4 | 4 | 4 | 5 |
| $b_2$ | | 0,8 | 0,8 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| $b_3$ | | 0,8 | 1 | 1,2 | 1,4 | 1,4 | 2,5 | 3 | 4 | 6 | 7 |
| $d_2$ | H11 | 1,6 | 2,05 | 2,5 | 2,9 | 3,3 | 4,2 | 5 | 6,8 | 8,5 | 10,3 |
| $d_3$ | h12 | 3,2 | 3,4 | 3,8 | 4,5 | 5 | 6,4 | 7,4 | 10,4 | 13 | 17 |
| $d_4$ | | 2,7 | 3 | 3,4 | 4 | 4,5 | 5,5 | 6,8 | 8,8 | 11 | 13 |
| $d_5$ 1) | | 3,5 | 3,8 | 4,2 | 5 | 5,5 | 7 | 8 | - | - | - |
| $d_6$ | h11 | 3,5 | 3,8 | 4,2 | 5 | 5,5 | 7 | 8 | 10 | 12,5 | 16 |
| g | | 0,1 | 0,1 | 0,1 | 0,1 | 0,1 | 0,1 | 0,16 | 0,16 | 0,2 | 0,2 |
| $l_1$ | h12 | 2,3 | 2,6 | 3 | 3,5 | 4 | 5 | 6 | 8 | 10 | 12 |
| $l_2$ | h12 | 3,5 | 4 | 4,5 | 5,5 | 6 | 7,5 | 9 | 12 | 15 | 18 |
| r | ≈ | 0,3 | 0,3 | 0,3 | 0,3 | 0,4 | 0,6 | 0,6 | 0,6 | 0,6 | 0,6 |
| t | | 0,5 | 0,5 | 0,5 | 0,5 | 0,5 | 0,6 | 0,6 | - | - | - |
| s | ≈ | - | - | 5 | 5,5 | 6 | 7 | 9 | 11 | 14 | 19 |
| e | ≈ | - | - | 5,8 | 6,1 | 6,9 | 8,1 | 10,4 | 12,7 | 16,2 | 21,9 |

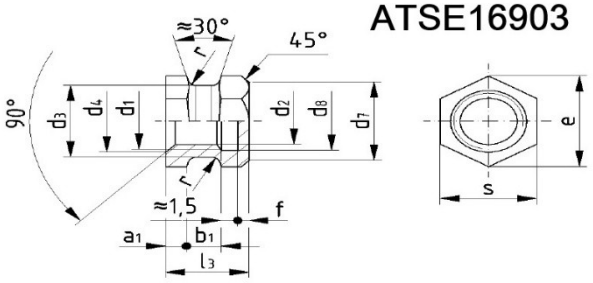




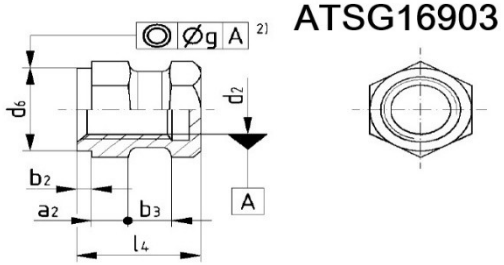

# THREADED INSERT DIN 16903 (DIN ISO 1101)

## INSERTION MOULDING

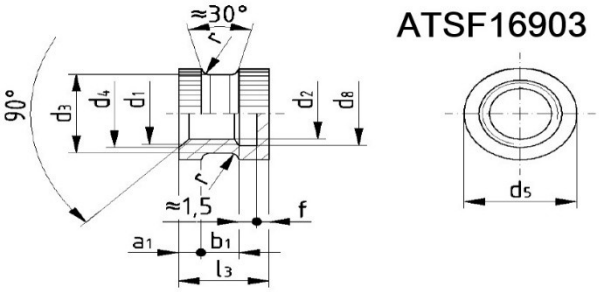
ATSE16903



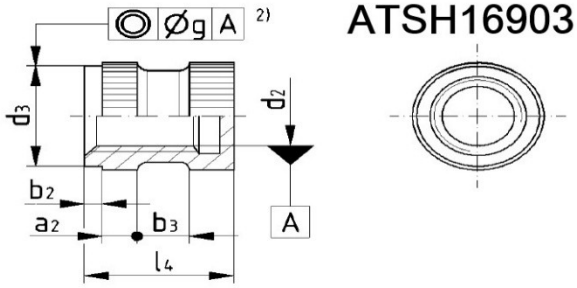

ATSG16903




ATSF16903




ATSH16903

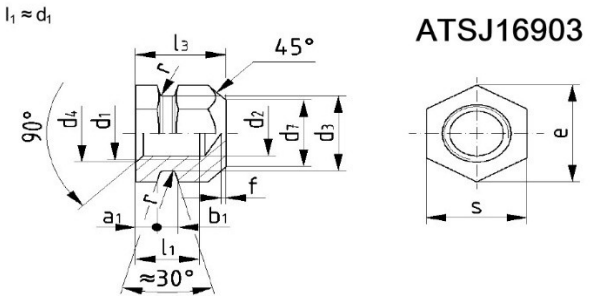


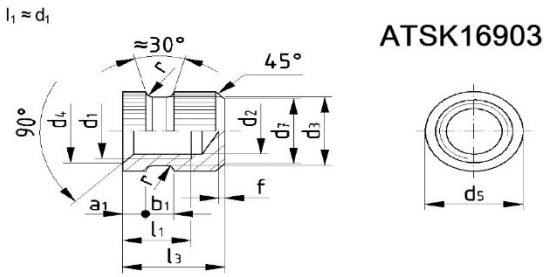

| Threaded inserts | | - | | E, F, G, H | | | | | E, G | |
|---|---|---|---|---|---|---|---|---|---|---|
| Quote | Tolerance | - | - | M 3 | M 3,5 | M 4 | M 5 | M 6 | M 8 | M 10 |
| $a_1$ | | - | - | 1,2 | 1,4 | 1,4 | 1,5 | 1,8 | 2,5 | ON REQUEST |
| $a_2$ | | - | - | 1,2 | 1,5 | 1,5 | 2 | 2,5 | 3,5 | |
| $b_1$ | | - | - | 1,5 | 1,8 | 2,2 | 2,5 | 3,2 | 3,8 | |
| $b_2$ | | - | - | 1 | 1 | 1 | 1 | 1 | 1 | |
| $b_3$ | | - | - | 1,8 | 2,2 | 2,5 | 3 | 3,5 | 4,5 | |
| f | | - | - | For manufacturing reasons, minimum pitch x 1.5 (to be specified before placing the order). | | | | | | |
| $d_2$ | H11 | - | - | 2,5 | 2,9 | 3,3 | 4,2 | 5 | 6,8 | |
| $d_3$ | h12 | - | - | 3,8 | 4,5 | 5 | 6,4 | 7,4 | 10,4 | |
| $d_4$ | | - | - | 3,4 | 4 | 4,5 | 5,5 | 6,8 | 8,8 | |
| $d_5$ 1) | | - | - | 4,2 | 5 | 5,5 | 7 | 8 | 12 | |
| $d_6$ | h11 | - | - | 4,2 | 5 | 5,5 | 7 | 8 | 10 | |
| $d_7$ | | - | - | 4,2 | 5,5 | 6 | 7 | 9 | 11 | |
| $d_8$ | +0,3 | - | - | 3 | 3,5 | 4 | 5 | 6 | 8 | |
| g | h14 | - | - | 0,1 | 0,1 | 0,1 | 0,1 | 0,16 | 0,16 | |
| $l_3$ | h12 | - | - | 3,8 | 4,5 | 5 | 6 | 7 | 9,5 | |
| $l_4$ | h12 | - | - | 5,3 | 6,5 | 7 | 8,5 | 10 | 13,5 | |
| r | | - | - | 0,3 | 0,3 | 0,4 | 0,6 | 0,6 | 0,6 | |
| t | | - | - | 0,5 | 0,5 | 0,5 | 0,5 | 0,6 | - | |
| s | | - | - | 5 | 5,5 | 6 | 7 | 9 | 11 | |
| e | | - | - | 5,8 | 6,1 | 6,9 | 8,1 | 10,4 | 12,7 | |

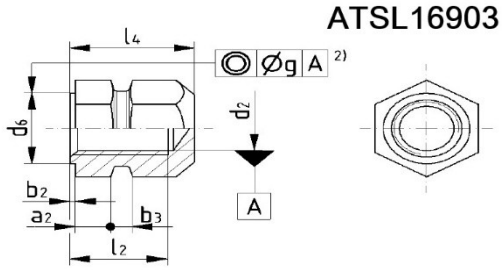


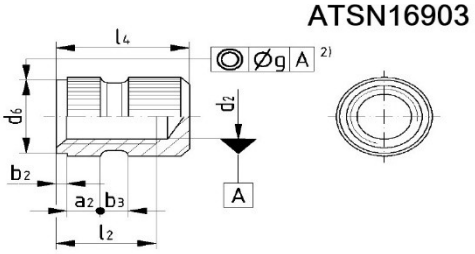

# THREADED INSERT DIN 16903 (DIN ISO 1101)

## INSERTION MOULDING

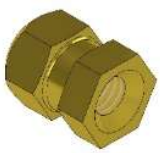


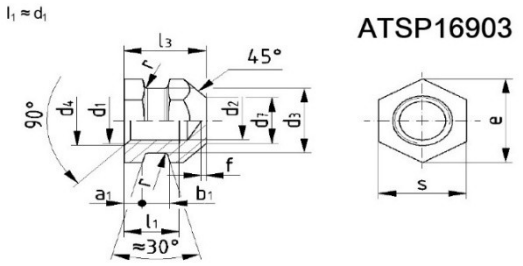

| Threaded inserts | | K, N | | J, K, L, N | | | | | J, L | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Quote | Tolerance | M 2 4) | M 2,5 4) | M 3 | (M 3,5) | M 4 | M 5 | M 6 | M 8 | M 10 | M 12 |
| $a_1$ | | 1 | 1,2 | 1,4 | 1,5 | 1,5 | 1,8 | 2 | 2,8 | 3,5 | 4 |
| $a_2$ | | 1,2 | 1,5 | 1,6 | 2 | 2 | 2,5 | 3 | 4,2 | 5,5 | 6,5 |
| $b_1$ | | 1,2 | 1,2 | 1,2 | 1,5 | 1,8 | 2 | 2,5 | 3 | 3,5 | 4 |
| $b_2$ | | 0,8 | 0,8 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| $b_3$ | | 1,2 | 1,2 | 1,2 | 1,5 | 1,8 | 2 | 2,5 | 3 | 3,5 | 4 |
| $d_2$ 3) | H11 | 1,6 | 2,05 | 2,5 | 2,9 | 3,3 | 4,2 | 5 | 6,8 | 8,5 | 10,3 |
| $d_3$ | h12 | 3,2 | 3,4 | 3,8 | 4,5 | 5 | 6,4 | 7,4 | 10 | 13 | 17 |
| $d_4$ | | 2,7 | 3 | 3,4 | 4 | 4,5 | 5,5 | 6,8 | 8,8 | 11 | 13 |
| $d_5$ 1) | ≈ | 3,5 | 3,8 | 4,2 | 5 | 5,5 | 7 | 8 | - | - | - |
| $d_6$ | h11 | 3,5 | 3,8 | 4,2 | 5 | 5,5 | 7 | 8 | 10 | 12,5 | 16 |
| $d_7$ | | 3 | 3,4 | 3,8 | 4,5 | 5 | 6 | 7 | 9 | 12 | 15 |
| f | +0,2 4) | 0,4 | 0,4 | 0,5 | 0,5 | 0,5 | 0,5 | 0,5 | 0,8 | 0,8 | 1 |
| $l_1$ | h14 4) | 2,3 | 2,6 | 3 | 3,5 | 4 | 5 | 6 | 8 | 10 | 12 |
| $l_2$ | h14 4) | 3,5 | 4 | 4,5 | 5,5 | 6 | 7,5 | 9 | 12 | 15 | 18 |
| $l_3$ | h12 4) | 3,8 | 4,2 | 4,8 | 5,5 | 6,5 | 7,6 | 9 | 12 | 14,2 | 17 |
| $l_4$ | h12 4) | 5 | 5,6 | 6,3 | 7,5 | 8,5 | 10,2 | 12 | 16 | 19,2 | 23 |
| s | | - | - | - | - | 6 | 7 | 9 | 11 | 14 | 19 |
| e | ≈ | - | - | - | - | 6,9 | 8,1 | 10,4 | 12,7 | 16,2 | 21,9 |
| g 4) | | 0,1 | 0,1 | 0,1 | 0,1 | 0,1 | 0,1 | 0,16 | 0,16 | 0,2 | 0,2 |
| r 4) | ≈ | 0,3 | 0,3 | 0,3 | 0,3 | 0,4 | 0,6 | 0,6 | 0,6 | 0,6 | 0,6 |
| t 4) | ≈ | 0,5 | 0,5 | 0,5 | 0,5 | 0,5 | 0,5 | 0,6 | - | - | - |



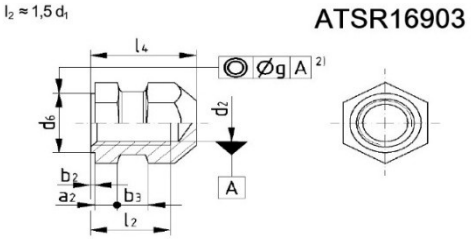

# THREADED INSERT DIN 16903 (DIN ISO 1101)

## INSERTION MOULDING

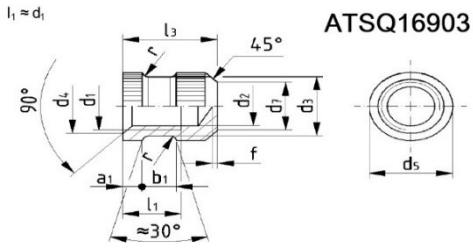
ATSP16903



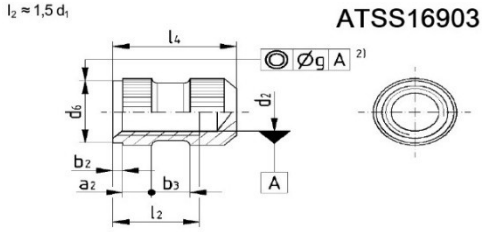

ATSR16903



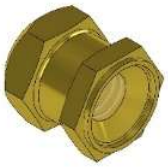

ATSQ16903




ATSS16903

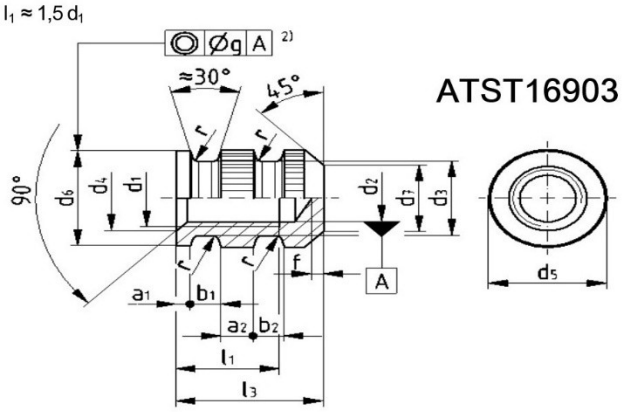


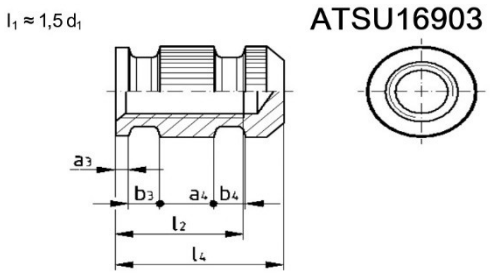

| Threaded inserts | | Q, S | | P, Q, R, S | | | | | P, R | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Quote | Tolerance | M 2 | M 2,5 | M 3 | (M 3,5) | M 4 | M 5 | M 6 | M 8 | M 10 | M 12 |
| $a_1$ | | 1 | 1,2 | 1,4 | 1,5 | 1,5 | 1,8 | 2 | 2,8 | 3,5 | 4 |
| $a_2$ | | 1,2 | 1,5 | 1,6 | 2 | 2 | 2,5 | 3 | 4 | 5 | 5 |
| $b_1$ | | 1,2 | 1,5 | 1,8 | 1,8 | 2,5 | 3 | 3,5 | 4,5 | 5 | 6 |
| $b_2$ | | 0,8 | 0,8 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| $b_3$ | | 1,6 | 1,6 | 1,8 | 2 | 2,8 | 3,5 | 4 | 5,5 | 6 | 7 |
| $d_2$ | H11 | 1,6 | 2,05 | 2,5 | 2,9 | 3,3 | 4,2 | 5 | 6,8 | 8,5 | 10,3 |
| $d_3$ | h12 | 3,2 | 3,4 | 3,8 | 4,5 | 5 | 6,4 | 7,4 | 10,4 | 13 | 17 |
| $d_4$ | | 2,7 | 3 | 3,4 | 4 | 4,5 | 5,5 | 6,8 | 8,8 | 11 | 13 |
| $d_5$ 1) | | 3,5 | 3,8 | 4,2 | 5 | 5,5 | 7 | 8 | - | - | - |
| $d_6$ | h11 | 3,5 | 3,8 | 4,2 | 5 | 5,5 | 7 | 8 | 10 | 12,5 | 16 |
| $d_7$ | | 2,5 | 2,5 | 2,8 | 3,5 | 4 | 5 | 6 | 7 | 10 | 12 |
| f | +0,2 | 0,4 | 0,4 | 0,5 | 0,5 | 0,5 | 0,5 | 0,5 | 0,8 | 0,8 | 1 |
| g | | 0,1 | 0,1 | 0,1 | 0,1 | 0,1 | 0,1 | 0,16 | 0,16 | 0,2 | 0,2 |
| $l_1$ | h14 | 2,3 | 2,6 | 3 | 3,5 | 4 | 5 | 6 | 8 | 10 | 12 |
| $l_2$ | h14 | 3,5 | 4 | 4,5 | 5,5 | 6 | 7,5 | 9 | 12 | 15 | 18 |
| $l_3$ | h12 | 4 | 4,6 | 5,5 | 6 | 7 | 8,3 | 9,8 | 12,6 | 15 | 17,8 |
| $l_4$ | h12 | 5,2 | 6 | 7 | 8 | 9 | 10,8 | 12,8 | 16,6 | 20 | 23,8 |
| r | ≈ | 0,3 | 0,3 | 0,3 | 0,3 | 0,4 | 0,6 | 0,6 | 0,6 | 0,6 | 0,6 |
| t | ≈ | 0,5 | 0,5 | 0,5 | 0,5 | 0,5 | 0,5 | 0,6 | - | - | - |
| s | | - | - | 5 | 5,5 | 6 | 7 | 9 | 11 | 14 | 19 |
| e | | - | - | 5,8 | 6,1 | 6,9 | 8,1 | 10,4 | 12,7 | 16,2 | 21,9 |



# THREADED INSERT DIN 16903 (DIN ISO 1101)

## INSERTION MOULDING




| Threaded inserts | | T | | | | T, U | | | U | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Quote** | **Tolerance** | M 2 | M 2,5 | M 3 | (M 3,5) | M 4 | M 5 | M 6 | M 8 | M 10 | M 12 |
| $a_1$ | | 0,6 | 0,6 | 0,8 | 0,8 | 0,8 | 1 | 1,2 | - | - | - |
| $a_2$ | | 1 | 1,1 | 1,3 | 1,6 | 1,8 | 2,2 | 2,8 | - | - | - |
| $a_3$ | | - | - | - | - | 1 | 1 | 1,2 | 1,5 | 1,5 | 2 |
| $a_4$ | | - | - | - | - | 4 | 4,5 | 5 | 6 | 8 | 10 |
| $b_1$ | | 1,2 | 1,4 | 1,5 | 1,7 | 1,9 | 2,2 | 2,7 | - | - | - |
| $b_2$ | | 1,2 | 1,4 | 1,5 | 1,7 | 1,9 | 2,2 | 2,7 | - | - | - |
| $b_3$ | | - | - | - | - | 2 | 2,5 | 3 | 4 | 5 | 6 |
| $b_4$ | | - | - | - | - | 2 | 2,5 | 3 | 4 | 5 | 6 |
| $d_2$ | H11 | 1,6 | 2,05 | 2,5 | 2,9 | 3,3 | 4,2 | 5 | 6,8 | 8,5 | 10,3 |
| $d_3$ | h12 | 3,2 | 3,5 | 4 | 4,6 | 5,3 | 6,6 | 7,8 | 10,5 | 13 | 15,7 |
| $d_4$ | | 2,7 | 3 | 3,4 | 4 | 4,5 | 5,5 | 6,8 | 8,8 | 11 | 13 |
| $d_5$ 1) | | 4,5 | 5 | 5,5 | 6 | 7 | 9 | 10 | 12 | 15 | 18 |
| $d_6$ | h11 | 4,5 | 5 | 5,5 | 6 | 7 | 9 | 10 | 12 | 15 | 18 |
| $d_7$ | | 3,4 | 3,6 | 3,8 | 4,5 | 5 | 6 | 7 | 9 | 12 | 15 |
| f | +0,2 | 0,4 | 0,4 | 0,5 | 0,5 | 0,5 | 0,5 | 0,5 | 0,8 | 0,8 | 1 |
| $l_1$ | h14 | 3,5 | 4 | 4,5 | 5,5 | 6 | 7,5 | 9 | - | - | - |
| $l_2$ | h14 | - | - | - | - | 8 | 10 | 12 | 16 | 20 | 24 |
| $l_3$ | h12 | 5,2 | 6 | 7 | 8 | 9 | 10,5 | 12,8 | - | - | - |
| $l_4$ | h12 | - | - | - | - | 11 | 13,3 | 15,8 | 20,6 | 25 | 29,8 |
| g | | 0,1 | 0,1 | 0,1 | 0,1 | 0,1 | 0,1 | 0,16 | 0,16 | 0,2 | 0,2 |
| t | ≈ | 0,5 | 0,5 | 0,5 | 0,5 | 0,5 | 0,6 | 0,6 | 0,6 | 0,6 | 0,8 |
| r | ≈ | 0,3 | 0,3 | 0,3 | 0,3 | 0,4 | 0,6 | 0,6 | 0,6 | 0,6 | 0,6 |

# SELF-TAPPING THREADED INSERT
# ATSU212 – ATSBAF212
## INSERTION WITH MANUAL TOOL OR TAPPING MACHINE

The self-tapping bushing **ATSU212** and **ATSBAF212** is screwed onto both thermoplastics and thermosets.
The self-tapping insert with internal and external thread is characterized by a tapping slit and provides excellent shear and tensile strength.

## ATSU212

- Brass

## ATSBAF212

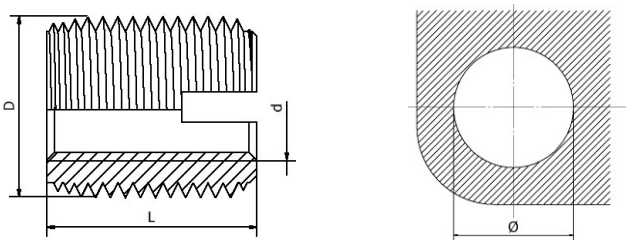
- Chrome VI-free Z.B. steel
- 303 Stainless steel
- 316 Stainless Steel

*** The choice of drilling Ø depends on the hardness of the base material**

| CODE | | | | THREAD | | Indicative Drilling Ø* | Hole Min. Depth | L |
|---|---|---|---|---|---|---|---|---|
| Galvanised Steel | 303 Stainless steel | 316 Stainless Steel | Brass | d int. thread | D Ext. thread | | | |
| ATSBAF212M2,5ACC | ATSBAF212M2,5I | ATSBAF212M2,5II | ATSU212M2,5 | M2,5x 0,45 | 4,5 x 0,5 | 4,0 – 4,3 | 8 | 6 |
| ATSBAF212M03ACC | ATSBAF212M03I | ATSBAF212M03II | ATSU212M3 | M3 x 0,5 | 5,0 x 0,5 | 4,5 – 4,8 | 8 | 6 |
| ATSBAF212M04ACC | ATSBAF212M04I | ATSBAF212M04II | ATSU212M4 | M4 x 0,7 | 6,5 X 0,75 | 5,8 – 6,2 | 10 | 8 |
| ATSBAF212M05ACC | ATSBAF212M05I | ATSBAF212M05II | ATSU212M5 | M5 x 0,8 | 8,0 X 1 | 7,1 – 7,6 | 13 | 10 |
| ATSBAF212M06AACC | ATSBAF212M06AI | ATSBAF212M06AII | ATSU212M6A | M6 x 1 | 9,0 x 1 | 8,1 – 8,6 | 15 | 12 |
| ATSBAF212M06ACC | ATSBAF212M06I | ATSBAF212M06II | ATSU212M6 | M6 x 1 | 10 x 1,5 | 8,6 – 9,4 | 17 | 14 |
| ATSBAF212M08ACC | ATSBAF212M08I | ATSBAF212M08II | ATSU212M8 | M8 x 1,25 | 12 x 1,5 | 10,6 –11,4 | 18 | 15 |
| ATSBAF212M10ACC | ATSBAF212M10I | ATSBAF212M10II | ATSU212M10 | M10 x 1,5 | 14 x 1,5 | 12,6 –13,4 | 22 | 18 |
| ATSBAF212M12ACC | ATSBAF212M12I | ATSBAF212M12II | ATSU212M12 | M12 x1,75 | 16 x 1,5 | 14,6 –15,4 | 26 | 22 |
| ATSBAF212M14ACC | ATSBAF212M14I | ATSBAF212M14II | ATSU212M14 | M14 x 2 | 18 x 1,5 | 16,6 –17,4 | 28 | 24 |
| ATSBAF212M16ACC | ATSBAF212M16I | ATSBAF212M16II | ATSU212M16 | M16 x 2 | 20 x 1,5 | 18,6 –19,4 | 27 | 22 |

*All dimensions are expressed in mm*

## ATSU212 - ATSBAF212



# ATSBAF318 SELF-TAPPING THREADED INSERT

The self-tapping threaded insert **ATSBAF318** is screwed onto both thermoplastics and thermosets.
Short and compact, with internal and external threads characterized by tapping holes, it is particularly suitable for thin thicknesses.

## ATSBAF318

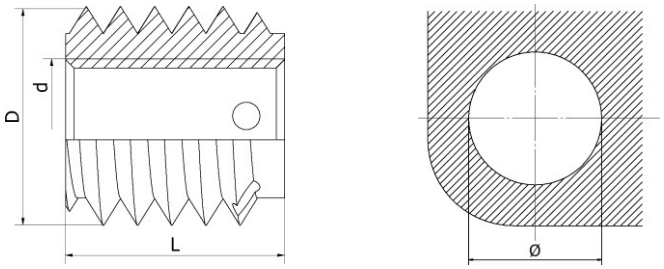
- Chrome VI-free Z.B. steel
- 303 Stainless steel

| CODE | | THREAD | | Indicative Drilling Ø* | Hole Min. Depth | L |
|---|---|---|---|---|---|---|
| Galvanised Steel | 303 Stainless steel | D int. thread | D Ext. thread | | | |
| ATSBAF318M03C<br>ATSBAF318M03L | ATSBAF318M03CI<br>ATSBAF318M03LI | M3 x 0,5 | 5 x 0,5 | 4,6 – 4,8 | 6<br>8 | 4<br>6 |
| ATSBAF318M04C<br>ATSBAF318M04L | ATSBAF318M04CI<br>ATSBAF318M04LI | M4 x 0,7 | 6,5 x 0,8 | 6,0 – 6,2 | 8<br>10 | 6<br>8 |
| ATSBAF318M05C<br>ATSBAF318M05L | ATSBAF318M05CI<br>ATSBAF318M05LI | M5 x 0,8 | 8,0 x 1 | 7,4 – 7,7 | 9<br>13 | 7<br>10 |
| ATSBAF318M06C<br>ATSBAF318M06L | ATSBAF318M06CI<br>ATSBAF318M06LI | M6 x 1,0 | 10,0 x 1,25 | 9,3 – 9,6 | 10<br>15 | 8<br>12 |
| ATSBAF318M08C<br>ATSBAF318M08L | ATSBAF318M08CI<br>ATSBAF318M08LI | M8 x 1,25 | 12,0 x 1,5 | 11,1 – 11,5 | 11<br>17 | 9<br>14 |
| ATSBAF318M10C<br>ATSBAF318M10L | ATSBAF318M10CI<br>ATSBAF318M10LI | M10 x 1,5 | 14,0 x 1,5 | 13,1 – 11,5 | 13<br>22 | 10<br>18 |
| ATSBAF318M12C<br>ATSBAF318M12L | ATSBAF318M12CI<br>ATSBAF318M12LI | M12 x 1,75 | 16,0 x 1,75 | 15,0 – 15,4 | 15<br>26 | 12<br>22 |
| ATSBAF318M14C<br>ATSBAF318M14L | ATSBAF318M14CI<br>ATSBAF318M14LI | M14 x 2,0 | 18,0 x 2 | 17,0 – 17,4 | 17<br>28 | 14<br>24 |

*** The choice of drilling Ø depends on the hardness of the base material**

*All dimensions are expressed in mm*

ATSBAF318




The company A.T.S. S.n.c. was founded in 1983 initially as a technical service in the spot-welding sector, later, thanks to numerous customer requests, a license was acquired to market welding systems and related spare parts.

Today, A.T.S. S.r.l., with the help of valid collaborators who systematically attend training and refresher courses, is at the forefront in the supply of equipment and materials in the catalogue thus defined as standard. It also specializes in the manufacture of customer-specific parts, and any other items on request inherent to the tacking, stud welding and fastening sector.

All the equipment supplied is guaranteed by the assistance of specialized in-house technical staff using certified equipment.

On 22/07/2002 the company obtained with great satisfaction and pride the Quality Management System certification UNI EN ISO 9001:2000 adapting to the new standard UNI EN ISO 9001:2015 from 03/04/2018.

The main focus is on the customer, on the ability to recognize their needs and expectations, with the aim of being in line with market expectations and striving to achieve the objectives set through continuous improvement.

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